

REMARKS

I. Introduction

Claims 10 and 12-18 remain pending in the present application. In view of the following remarks, it is respectfully submitted that claims 10 and 12-18 are allowable, and reconsideration is respectfully requested.

II. Claim Objection

The Examiner objected to claim 10 because of a certain informality. In response, Applicant has amended claim 10 in accordance with the Examiner's suggestion.

III. Rejections of Claims 10, 12, 14-16 and 18 under 35 U.S.C. §103(a)

Claims 10, 12, 14-16 and 18 remain rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,243,277 ("Sun"), in view of U.S. Patent 5,986,354 ("Nagao") and the article "No Space? No Problem for these Tiny, Inductorless, Efficient, Low Noise, 1.8V and 1.5V, Step-Down DC/DC Converters," Bill Walter, Linear Technology Magazine, December 2001 ("Walter").

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references, and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. M.P.E.P. §2143. In addition, as clearly indicated by the Supreme Court, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. See KSR Int'l Co. v. Teleflex, Inc., 127 S. Ct. 1727 (2007). To the extent that the Examiner may be relying on the doctrine of inherent disclosure in support of the obviousness rejection, the Examiner must provide a "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied art." (See M.P.E.P. § 2112; emphasis in original; see also Ex parte Levy, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Claim 10 recites, in relevant parts, “a reserve energy accumulator to which a charging voltage higher than the at least one internal normal d.c. voltage is applied by the high-voltage vehicle electric system during regular operation, . . . and at least one step-down regulator that steps down an input direct voltage applied thereto to the at least one internal normal d.c. voltage, wherein the step-down regulator does not include an inductor, and wherein in regular operation the motor vehicle electric supply voltage is applied directly by the high-voltage vehicle electric system via a diode as the charging voltage to the reserve energy accumulator and is also applied via a diode as an input direct voltage to the step-down regulator, and wherein the reserve voltage supplied by the reserve energy accumulator is applied directly as input direct voltage to the at least one step-down regulator in an emergency.” As clearly recited in claim 10, two different voltage levels are provided: internal normal DC voltage, and an input direct voltage/charging voltage which is higher than the internal normal DC voltage. In regular operation, the input direct voltage/charging voltage (“motor vehicle electric system supply voltage [which] is applied directly by the high-voltage vehicle electric system”) is supplied by the high-voltage vehicle electric system directly to both the step-down regulator and the reserve energy accumulator, such that the internal normal DC voltage (lower voltage) is generated from the input direct voltage/charging voltage (higher voltage) by the step-down regulator and the reserve energy accumulator is charged.

In support of the rejection, the Examiner contends that Sun teaches “a reserve energy accumulator (314) to which a charging voltage higher than the normal DC voltage (for the load 300) is applied by a high-voltage electric system during regular operation (see column 2, lines 13-16 and column 3, lines 16-18).” However, nothing in Sun (including the cited sections) actually teaches the claimed feature of “a reserve energy accumulator to which a charging voltage higher than the at least one internal normal d.c. voltage is applied by the high-voltage vehicle electric system during regular operation.” Column 2, lines 13-16 indicate “a bi-directional energy storage module for an energy storage application storing energy at a voltage that is much higher than the input voltage,” and col. 3, l. 16-18 merely indicate that the “energy storage component or module 314 is coupled to the DC to DC converters 308, 310, 312 and the DC Bus 306,” and that the “energy storage module 314 includes a bi-directional DC to DC converter.” As clearly shown in Fig. 3 and described in col. 3, l. 32-34 of Sun, the energy storage module 314 is charged from the DC Bus 306 in normal operation. Accordingly, the disclosure in col. 2, l. 13-16 indicating “a bi-directional

energy storage module for an energy storage application **storing energy at a voltage that is much higher than the input voltage**” merely means the **input voltage to the energy storage module 314** is **lower** than the **voltage at which the energy is stored in the energy storage module**, but this does not in any way support the Examiner’s assertion that Sun teaches “a reserve energy accumulator (314) to which **a charging voltage higher than the normal DC voltage** (for the load 300) **is applied by a high-voltage electric system** during regular operation,” let alone teach or suggest the claimed feature of “a reserve energy accumulator **to which a charging voltage higher than the at least one internal normal d.c. voltage is applied by the high-voltage vehicle electric system** during regular operation.”

The fundamental flaw in the Examiner’s reliance on the Sun reference is that Sun simply does not teach or suggest that “**a charging voltage higher than the at least one internal normal d.c. voltage is applied by the high-voltage vehicle electric system** [to the reserve energy accumulator] during regular operation,” and hence Sun also fails to teach or suggest that **the internal normal DC voltage (lower voltage) is generated from the input direct voltage/charging voltage (higher voltage) by the step-down regulator**. In order to overcome this critical deficiency, the Examiner attempts to support the obviousness rejection by asserting a **hypothetical situation**, i.e., “since the regulator 308 converts the supplied voltage to the level required for the load, **if the level required for the load is lower** than the supplied voltage, the regulator will act as a step-down regulator.” However, there is no disclosure in Sun that indicates anything about the relative levels of the voltage supplied by the DC Bus 306 and the output voltage of the DC/DC converters 308-312, let alone any indication that “**a charging voltage higher than the at least one internal normal d.c. voltage is applied by the high-voltage vehicle electric system** [to the reserve energy accumulator] during regular operation.” In addition, there is no way that the above-recited claimed features are inherently taught by Sun, since the Examiner implicitly concedes that the claimed features are only satisfied “**if the level required for the load is lower** than the supplied voltage,” which means the claimed features do not “**necessarily** flow from the teachings of the applied art.” Accordingly, the Examiner’s hypothetical assumption is a pure speculation, which does not satisfy the Examiner’s burden of establishing a *prima facie* case of obviousness.

For at least this reason alone, the teachings of Sun fail to support the Examiner’s obviousness conclusion.

In addition to the above, the teachings of Nagao and Walter clearly do not remedy the above-noted deficiencies of Sun, i.e., Nagao and Walter similarly fail to teach or suggest the present claimed feature of “a reserve energy accumulator **to which a charging voltage higher than the at least one internal normal d.c. voltage is applied by the high-voltage vehicle electric system** during regular operation,” as well as the feature that the internal normal DC voltage (lower voltage) is generated from the input direct voltage/charging voltage (higher voltage) by the step-down regulator.

For at least the foregoing reasons, claim 10 and its dependent claims 12, 14-16 and 18 are allowable over the combination of Sun, Nagao and Walter. Withdrawal of the obviousness rejection is requested.

IV. Rejection of Claims 13 and 17 under 35 U.S.C. §103(a)

Claims 13 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sun, Nagao, Walter and U.K. Patent GB 2,246,648 (“Lieu”).

Applicant notes that claims 13 and 17 ultimately depend on claim 10. As noted above, the combination of Sun, Nagao and Walter clearly fails to render obvious parent claim 10. Furthermore, the teachings of Lieu clearly fail to remedy the deficiencies of Sun, Nagao and Walter as applied against parent claim 10. Therefore, the combination of Sun, Nagao, Walter and Lieu fails to render obvious dependent claims 13 and 17. Withdrawal of the obviousness rejection is requested.

V. **Conclusion**

It is therefore respectfully submitted that the pending claims 10 and 12-18 are allowable. All issues raised by the Examiner have been addressed, and an early and favorable action on the merits is solicited.

Respectfully submitted,

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